ASME A17.2-2012
(Revision of ASME A17.2-2010)

Guide for Inspection of Elevators, Escalators, and Moving Walks

Includes Inspection Procedures for Electric Traction and Winding Drum Elevators, Hydraulic Elevators, Inclined Elevators, Private Residence Elevators, and Escalators and Moving Walks

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The American Society of Mechanical Engineers
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The next edition of this Guide is scheduled for publication in 2014. There will be no addenda issued to this edition.

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This Guide was developed under procedures accredited as meeting the criteria for American National Standards. The Standards Committee that approved the Guide was balanced to assure that individuals from competent and concerned interests have had an opportunity to participate. The proposed Guide was made available for public review and comment that provides an opportunity for additional public input from industry, academia, regulatory agencies, and the public-at-large.

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FOREWORD

Following the publication of the 1925 edition of the Safety Code for Elevators, Dumbwaiters, and Escalators, requests for a handbook, or manual, covering the inspection of elevators were received by the A17 Committee. This Committee appointed a subcommittee to prepare such a manual. Cities, states, insurance companies, elevator manufacturers and maintenance companies, and the federal government furnished the Committee with material based on their field experiences. A final draft was prepared and was unanimously approved by the A17 Committee, the Code Sponsors, and the American National Association (presently known as the American National Standards Institute, Inc.) and the first edition of the Manual was published in 1937 simultaneously with the fourth edition of the Code.

A second edition of the Manual was prepared by the Committee to bring it in line with the fourth edition of the Code, including the 1942 supplement. A new Part to cover the inspection of escalators, and new Appendices were added to cover descriptions of various types of safeties, methods for determining stopping distances of gradual-type safeties, guide rail data, types of speed governors, and the handling and socketing of wire rope. The second edition of the Manual was approved by the American Standards Association and was published in 1945.

The third edition of the Manual was published in 1960 and included revision to bring it in line with the 1960 edition of the Code.

The fourth edition of the Manual was published in 1973 to bring it in line with the 1971 editions including the 1972 supplement to the Code, and to update the inspection procedures. A new Part was also added to cover the inspection of moving walks.

The Inspectors' Manual Subcommittee was reactivated in 1976 to review the Manual and coordinate it with a proposed new edition of the Code. The Subcommittee, during its review, felt that it was time for the Manual to take on a new format. Thus, the fifth edition of the Manual, published in 1979, was reorganized into four major Parts: Electric Elevators, Hydraulic Elevators, Escalators, and Moving Walks. Each Part was further divided into three major Divisions: Routine Inspection, Periodic Inspection and Test, and Acceptance Inspection and Test. New Appendices were added to this edition, containing sample inspection checklists for electric elevators, hydraulic elevators, escalators and moving walks. A considerable amount of new material was also added to the Manual to bring it in line with the 1978 edition of the Code.

In order to keep the Manual as current as possible, the Committee began the policy of publishing supplements on a regular basis. Supplements were issued in 1980 and 1981 to update the 1979 edition.

The sixth edition of the Manual contained the revisions included in the 1980 and 1981 supplements, as well as many other revisions made to keep the Manual abreast of new Code requirements and to add more comprehensive inspection and testing procedures. The title of this edition was also changed to ANSI/ASME A17.2 Inspectors' Manual for Elevators and Escalators. This change was made to reflect a reorganization of the A17 Committee structure, and to shorten the title for convenience.

The seventh edition of the Manual included the revisions in the 1983 and 1984 supplements as well as other new revisions. One of the major revisions was the Inspection Checklists in Appendix E, which were expanded to include routine and periodic inspections and tests in addition to acceptance inspections and tests.

The eighth edition included revisions in the 1986 and 1987 supplements as well as other revisions listed in the Summary of Changes section.

In 1989, the Inspectors' Manual Committee polled the inspection community to determine what portions of the Manual were most effective and the direction that should be taken to meet the need of the inspector. In response to requests for equipment, specific inspection guidelines, techniques, and cautionary notes as well as field convenience, the concept of individual equipment inspection manuals was developed. The Committee decided to concentrate initially on three major segments. As a result, the Inspectors' Manual is to be published in three volumes: A17.2.1, Electric Elevators; A17.2.2, Hydraulic Elevators; and A17.2.3, Escalators and Moving Walks. Each volume addresses inspection procedures for assuring compliance with the A17.1 Code since 1955 and the A17.3 Code. It is the Committee's plan to publish additional manuals to address inspection of other equipments such as roped-hydraulic elevators, dumbwaiters, sidewalk elevators, private residence elevators, hand elevators, material lifts and dumbwaiters with automatic transfer devices, special purpose personnel elevators, rack and pinion elevators, inclined elevators, screw-column elevators, elevators used for construction, wheelchair and stairway chairlifts, shipboard elevators, and rooftop elevators.

In 1993, the Inspectors' Manual Committee was requested to review equipment installed prior to the

1955 edition of A17.1. ASME A17.2.3 includes inspection and testing procedures for assuring compliance with some requirements in pre-1955 editions of A17.1.

In 1999, based on feedback from the user community, the A17 Main Committee approved the Inspectors' Manual Committee's recommendation to consolidate the three existing manuals: A17.2.1–1996, Inspectors' Manual for Electric Elevators (including A17.2.1a–1997 and A17.2.1b–1998 Addenda); A17.2.2–1997, Inspectors' Manual for Hydraulic Elevators (including A17.2.2a–1998 Addenda); and A17.2.3–1998, Inspectors' Manual for Escalators and Moving Walks (including A17.2.3a–2000 Addenda). The resulting A17.2–2001, *Guide for Inspection of Elevators, Escalators, and Moving Walks*, represents an editorial consolidation of the three manuals. The revised standard also includes technical revisions, which have been approved by the A17.1 Committee since the last publications.

The second edition of the Guide was published in 2004. Nonmandatory Appendix B appears for the first time in this edition.

The third edition of the Guide includes revisions listed in the Summary of Changes section.

The fourth edition of the Guide includes revisions listed in the Summary of Changes section.

The fifth edition of the Guide includes revisions listed in the Summary of Changes section. This Edition also adds an Inspection Guide for Private Residence Elevators.

The following is a list of past editions and supplements and the dates on which they received final approval. The dates of issuance are also included for documents published since 1979.

Editions and Supplements		Approved	Issued
First Edition	ASA A17.2–1937	July 1937	…
Second Edition	ASA A17.2–1945	October 22, 1945	…
Third Edition	ASA A17.2–1960	August 10, 1960	…
Addenda	ASA A17.2a–1965	July 29, 1965	…
Supplement	USAS A17.2b–1967	July 7, 1967	…
Fourth Edition	ANSI A17.2–1973	May 29, 1973	…
Fifth Edition	ANSI A17.2–1979	February 18, 1979	May 15, 1979
Supplement	ANSI A17.2a–1980	August 11, 1980	September 15, 1980
Supplement	ANSI A17.2b–1981	November 23, 1981	January 15, 1982
Sixth Edition	ANSI/ASME A17.2–1982	September 22, 1982	November 30, 1982
Supplement	ANSI/ASME A17.2a–1983	September 23, 1983	December 20, 1983
Supplement	ANSI/ASME A17.2b–1984	August 16, 1984	September 16, 1984
Seventh Edition	ANSI/ASME A17.2–1985	July 23, 1985	October 31, 1985
Supplement	ANSI/ASME A17.2a–1986	September 8, 1986	October 31, 1986
Supplement	ANSI/ASME A17.2b–1987	September 11, 1987	October 30, 1987
Eighth Edition	ANSI/ASME A17.2–1988	August 25, 1988	October 31, 1988
Addenda	ANSI/ASME A17.2a–1989	November 10, 1989	December 31, 1989
Addenda	ANSI/ASME A17.2b–1990	October 8, 1990	January 21, 1991
First Edition	ASME A17.2.1–1993	January 22, 1993	May 31, 1993
Addenda	ASME A17.2.1a–1994	August 18, 1994	December 31, 1994
Addenda	ASME A17.2.1b–1995	August 10, 1995	January 29, 1996
Second Edition	ASME A17.2.1–1996	September 6, 1996	January 31, 1997
Addenda	ASME A17.2.1a–1997	December 16, 1997	January 30, 1998
Addenda	ASME A17.2.1b–1998	November 13, 1998	February 19, 1999
First Edition	ASME A17.2.2–1994	April 14, 1994	May 31, 1994
Addenda	ASME A17.2.2a–1995	August 10, 1995	January 10, 1996
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Addenda	ASME A17.2.2a–1998	November 13, 1998	February 5, 1999

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Addenda	ASME A17.2.3b–1997	November 18, 1997	December 31, 1997
Second Edition	ASME A17.2.3–1998	November 16, 1998	February 26, 1999
Addenda	ASME A17.2.3a–2000	June 22, 2000	August 10, 2000
First Edition	ASME A17.2–2001	October 4, 2001	December 31, 2001
Second Edition	ASME A17.2–2004	July 22, 2004	March 31, 2005
Third Edition	ASME A17.2–2007	July 11, 2007	October 5, 2007
Fourth Edition	ASME A17.2–2010	September 8, 2010	December 9, 2010
Fifth Edition	ASME A17.2–2012	September 14, 2012	October 22, 2012

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(April 2012)

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PREFACE

FORM AND ARRANGEMENT

This Guide addresses how-to inspection guidelines, techniques, and cautionary notes in a logical sequence. Subsections are arranged to focus on routine inspection requirements, followed by periodic test (annual and five year) and acceptance criteria. Appropriate references to the latest edition of the Code, in effect at the time of this Guide's publication, are listed at the end of each subsection. The referenced numbers may not be the same in earlier editions. This Guide is organized as follows: Parts 1 through 6 apply to electric and hydraulic elevators, Parts 7 and 8 apply to escalators, Parts 9 and 10 apply to moving walks, and Part 11 applies to machine-room-less (MRL) elevators. The Parts are arranged to show the location of the inspection:

Part 1	Elevator — Inside of Car
Part 2	Elevator — Machine Room
Part 3	Elevator — Top of Car
Part 4	Elevator — Outside Hoistway
Part 5	Elevator — Pit
Part 6	Elevator — Firefighters' Service
Part 7	Escalator — External
Part 8	Escalator — Internal
Part 9	Moving Walk — External
Part 10	Moving Walk — Internal
Part 11	Elevator — Machine-Room-Less (MRL)

Each inspection location is further subdivided as follows:

X	Location of inspection
X.X	Item to be inspected
X.X.1	Periodic inspections (routine)
X.X.1.1	Electric elevators (as applicable)
X.X.1.2	Hydraulic elevators (as applicable)
X.X.2	Periodic test
X.X.2.1	Electric elevators (as applicable)
X.X.2.2	Hydraulic elevators (as applicable)
X.X.3	Acceptance inspection
X.X.3.1	Electric elevators (as applicable)
X.X.3.2	Hydraulic elevators (as applicable)
X.X.4	Code references
X.X.4.1	Electric elevators (as applicable)
X.X.4.2	Hydraulic elevators (as applicable)

When a requirement within A17.1 or A17.3 cross-references another requirement, the cross-reference is shown with the refering requirement in braces, { }. For the A17.1–2000 and later edition requirements, where no direct cross-reference is found within the A17.1–2000 Cross-Reference Table, the prior code Rule (A17.1d–2000 and earlier editions) is shown in parentheses, ( ), with a preceding "NR" designation.

Subsection numbering of items may not be sequential when there are no inspection or test procedures indicated within this Guide.

NOTE: This Guide addresses the requirements of A17.1–1955 and later editions and latest edition of A17.3. Some requirements in earlier editions of A17.1 are also addressed. The inspector is referred to the particular edition of the A17.1 Code that applies for requirements prior to 1955.

This Guide has included the pertinent requirement from prior editions of A17.1, which differ from the requirements in the latest edition. As the inspector becomes familiar with the prescribed order of inspection procedures, variations may be appropriate. The Foreword, Preface, and Appendix that are included in this document have been approved by the A17 Committee, but are not part of this American National Standard.

NOTE: See also para. 2, Application, under the Introduction of this Guide.

REQUIREMENTS FOR EXISTING INSTALLATIONS

Elevators and escalators in jurisdictions that have adopted the Safety Code for Existing Elevators and Escalators, ASME A17.3, and installations that have been altered in accordance with Part XII of the Safety Code for Elevators and Escalators ANSI/ASME A17.1d–1986 and later editions must, as a minimum, conform to the requirements identified in this Guide as "A17.3." If an existing installation does not meet the requirements of the A17.3 Code, it must be upgraded. If an existing installation was required to meet more stringent requirements, it must continue to meet those requirements.

Alteration, if made, must conform to the requirements of A17.1, Part XII and the entire installation must conform to the requirements of A17.3. The alteration requirements in A17.1, Part XII may be more stringent than the requirements of A17.3. The equipment must conform to the more stringent of the two.

METRIC (SI) UNITS

This edition of the Guide uses both imperial and metric (SI) units. The units used in the Guide are the units found in the referenced code [e.g., imperial (metric) or metric (imperial)]. Information on the usage of SI units and conversion to imperial units is contained in IEEE/ASTM SI 10-1997, *Standard for the Use of the International*

System of Units (SI): The Modern Metric System; ASME Guide SI-1, *Orientation and Guide for Use of SI (Metric) Units*; or CAN/CSA-Z234-1, *Canadian Metric Practice Guide*.

DEFINITIONS

For definitions, see Section 3 of the ASME A17.1d–2000 and earlier editions (Section 1.3, A17.1–2000/B44-00 and later editions).

ASME ELEVATOR PUBLICATIONS

This Guide is one of the numerous codes and standards that have been or are being developed and published by the American Society of Mechanical Engineers. The following publications are of special interest to users of this Guide. For prices and availability, contact:

ASME Order Department
22 Law Drive
Box 2900
Fairfield, NJ 07007-2900
Tel: 800-843-2763
Fax: 973-882-1717
E-Mail: customercare@asme.org
ASME Website: www.asme.org/catalog

ASME A17.1/CSA B44 Safety Code for Elevators and Escalators. This American National Standard Safety Code covers the design, construction, installation, operation, testing, maintenance, alteration, and repair of elevators, dumbwaiters, escalators, moving walks, and material lifts and dumbwaiters with automatic transfer devices.

Inspection Checklists. The checklist forms shown in Nonmandatory Appendices A and B of this book are posted on the ASME Website: www.asme.org.

ASME A17.3 Safety Code for Existing Elevators and Escalators. This Code covers retroactive requirements for existing elevators and escalators. The purpose of this Code is to establish minimum requirements that will provide a reasonable degree of safety for the general public. While many of these requirements will also increase the degree of safety for the elevator mechanic and inspector, this area has not been addressed at this time.

ASME A17 CD-ROM for Elevators and Escalators. This CD-ROM contains the ASME A17.1, A17.2, and A17.3 standards. In addition, it contains the published interpretations applicable to these standards.

ASME A17.4 Guide for Emergency Personnel. This Guide for emergency personnel (fire, police, etc.), building owners, lessees, and building operating managers explains the proper procedures to be used for the safe removal of passengers from stalled cars.

CSA B44.1/ASME A17.5 Elevator and Escalator Electrical Equipment. This Code contains requirements for obtaining, labeling, and listing electrical equipment for elevators, escalators, moving walks, dumbwaiters, material lifts, platform lifts, and stairway lifts.

ASME A17.7/CSA B44.7 Performance-Based Safety Code for Elevators and Escalators. This American National Standard performance-based safety code covers the design, construction, installation, operation, testing, maintenance, alteration, and repair of elevators, dumbwaiters, escalators, moving walks, and material lifts.

Published Interpretations. Interpretations of the various A17 standards are published periodically.

Interpretations of A17.1 and A17.2 approved by the A17 Committee from June 14, 1972 through June 1979 were published in a separate book in 1980.

Starting with the 1981 edition of the Code, interpretations are published with each new edition and supplement of the applicable standard. A compilation of Interpretations Nos. 2–13 (June 1979–May 1989) has also been published by ASME. A compilation of all interpretations can also be obtained through the A17 CD-ROM.

Handbook on A17.1/B44 Safety Code. This Handbook augments the A17.1/B44 Codes with commentary, diagrams, and illustrations that are intended to explain the requirements of the A17.1/B44 Code.

The commentary contained in the Handbook is the opinion of the author and has not been approved by the A17 Committee or the B44 Technical Committee.

QEI-1 Standard for the Qualification of Elevator Inspectors. This Standard covers requirements for the qualification and duties of inspectors and inspection supervisors engaged in the inspection and testing of equipment within the scope of the A17.1/B44 Code.

ASME A18.1 Safety Standard for Platform Lifts and Stairway Chairlifts. This safety Standard covers the design, construction, installation, operation, inspection, testing, maintenance, and repair of inclined stairway chairlifts and inclined and vertical platform lifts intended for transportation of a mobility impaired person only.

CORRESPONDENCE WITH THE A17 COMMITTEE

ASME codes and standards are developed and maintained with the intent to represent the consensus of concerned interests. As such, users of this and other ASME A17 codes and standards may interact with the Committee by requesting interpretations, proposing revisions, and attending committee meetings. Correspondence should be addressed to:

Secretary, A17 Standards Committee
The American Society of Mechanical Engineers
Three Park Avenue
New York, NY 10016-5990
E-mail: customercare@asme.org

Abbreviations Used in This Code

Abbreviation	Unit	Abbreviation	Unit
A	ampere	lb	pound (mass)
°C	degree Celsius	lbf	pound (force)
deg	degree (angle)	lx	lux
°F	degree Fahrenheit	m	meter
ft/min	foot per minute	m^2	square meter
ft/s	foot per second	m^3	cubic meter
ft	foot	mA	milliampere
fc	footcandle	m/s	meter per second
ft^2	square foot	m/s^2	meter per second per second
ft^3	cubic foot	mm	millimeter
ft/s^2	foot per second per second	mm^2	square millimeter
h	hour	mm^3	cubic millimeter
Hz	hertz	MPa	megapascal
in.	inch	N	newton
$in.^2$	square inch	psi	pound per square inch
$in.^3$	cubic inch	s	second
kg	kilogram	V	volt
kPa	kilopascal		

Proposing Revisions. Revisions are made periodically to the Guide to incorporate changes that appear necessary or desirable, as demonstrated by the experience gained from the application of the procedures, and in order to conform to developments in elevator technology. Approved revisions will be published periodically.

The Committee welcomes proposals for revisions to this Guide. Such proposals should be as specific as possible: citing the Item number(s), the proposed wording, and a detailed description of the reasons for the proposal including any pertinent documentation.

Requesting Interpretations. On request, the A17 Committee will render an interpretation of any requirement of the Guide. Interpretations can only be rendered in response to a written request sent to the Secretary of the Standards Committee.

The request for interpretation should be clear and unambiguous. It is further recommended that the inquirer submits his request using the following format:

Subject: Cite the applicable Item number(s) and a concise description.

Edition: Cite the applicable edition and supplement of the Guide for which the interpretation is being requested.

Question: Phrase the question as a request for an interpretation of a specific item suitable for general understanding and use, not as a request for an approval of a proprietary design or situation. The inquirer may also include any plans or drawings that are necessary to explain the question; however, they should not contain proprietary names or information.

Requests that are not in this format will be written in this format by the Committee prior to being answered, which may inadvertently change the intent of the original request.

ASME procedures provide for reconsideration of any interpretation when or if additional information that might affect an interpretation is available. Further, persons aggrieved by an interpretation may appeal to the cognizant ASME committee or subcommittee. ASME does not "approve," "certify," "rate," or "endorse" any item, construction, proprietary device, or activity.

Attending Committee Meetings. The A17 Standards Committee and the various Working Committees regularly hold meetings, all of which are open to the public. Persons wishing to attend any meeting should contact the Secretary of the Standards Committee.

ASME A17.2-2012
SUMMARY OF CHANGES

Following approval by the ASME A17 Elevator and Escalator Committee and ASME, and after public review, ASME A17.2–2012 was approved by the American National Standards Institute on September 14, 2012.

The 2012 edition of ASME A17.2 includes the following revisions that are identified by a margin note, **(12)**.

Page	*Location*	*Change*
x–xii	Foreword	Updated
xiii–xvii	Committee Roster	Updated
xviii, xix	Preface	Under QEI-1 Standard for the Qualification of Elevator Inspectors, last sentence deleted
2	3	Revised
	4	Second paragraph added
3	7	Revised
4	Table 1	EIFESH entry added
5–16	Part 1	References updated throughout
7	1.5.1	Subparagraph (c) added
	1.5.2	Revised in its entirety
17–46	Part 2	References updated throughout
20	2.11.3	Revised
21	2.11.3.1	Revised
33	2.25.2.1	Revised
35	Table 2.29.2(a)	Revised
40	2.31.2.2	Revised
45	2.41	Revised
47–69	Part 3	References updated throughout
70–75	Part 4	References updated throughout
76–86	Part 5	References updated throughout
76	5.1	(1) 5.1.1(b) revised (2) 5.1.3 revised
100–120	Part 7	References updated throughout
105	7.5	Revised
121–129	Part 8	References updated throughout
130–141	Part 9	References updated throughout
137	9.14	Revised

Page	*Location*	*Change*
	Table 9.14.1(a)	Designator revised
138	Table 9.14.1(b)	Designator revised
	Table 9.14.1(c)	Designator and title revised
	9.15.3	First sentence deleted
142–149	Part 10	References updated throughout
174–190	Mandatory Appendix II	Added
191–194	Mandatory Appendix III	Added
195–220	Nonmandatory Appendix A	Updated
221–262	Nonmandatory Appendix B	Acceptance checklists for 2007 and 2010 editions added

GUIDE FOR INSPECTION OF ELEVATORS, ESCALATORS, AND MOVING WALKS

Introduction

1 SCOPE

This Guide covers recommended inspection and testing procedures for electric and hydraulic elevators, escalators, and moving walks required to conform to the Safety Code for Elevators and Escalators, A17.1–1955 and later editions and The Safety Code for Existing Elevators and Escalators, A17.3. This Guide also addresses some requirements from editions of A17.1 prior to 1955.

This guide also includes Canadian references and applicable exceptions for CSA B44-00 and later editions. Exceptions or deviations applicable in Canada are identified with the same ASME requirement number prefaced with a lowercase "c" for CSA B44-00 through CSA B44-04 Update 1.

NOTE: This Guide may not reflect the latest requirements in the current ASME A17.1/CSA B44 and ASME A17.3 Codes.

2 APPLICATION

This Guide is intended to assist qualified inspectors performing routine inspections and witnessing periodic and acceptance inspections and tests. It is not intended to serve as a basis for government regulations. This Guide does not contain information on handling discrepancies noted during an inspection and test. The authority having jurisdiction in their legislation adopting the Code is responsible for addressing this subject. The acceptance inspection and testing procedures apply only to the extent that they conform to the latest edition of the A17.1/B44 Code. The routine and periodic inspection and testing procedures apply only to the extent that they conform to the applicable Code requirements that were in effect at the time of installation or alteration. The inspection and testing procedures do not take into account local regulations that may differ.

It is recognized that inspectors will not be able to accomplish all the inspection procedures specified in this Guide, during each inspection. Qualified inspectors have the knowledge and experience to recognize potential deficiencies and to focus the inspection in those areas.

This Guide uses the following format to describe the appropriate inspection and test:

(a) For inspections and tests performed in compliance with ASME A17.1d–2000 and earlier editions

(1) Routine. The examination and operation of equipment at specified intervals by an inspector to check for compliance with the applicable Code requirements.

(2) Periodic Tests. Routine inspection and tests plus additional detailed examination and operation of equipment at specified intervals witnessed by an inspector to check for compliance with the applicable Code requirements.

(3) Acceptance. The initial inspection and tests of new or altered equipment to check for compliance with the applicable Code requirements.

(b) For inspections and tests performed in compliance with ASME A17.1–2000/CSA B44-00 and later editions

(1) Periodic Inspection. The examination and operation of equipment at specified intervals by an inspector to check for compliance with the applicable Code requirements.

(2) Periodic Tests. The testing and detailed examination and operation of equipment at specified intervals witnessed by an inspector to check for compliance with the applicable Code requirements.

(3) Acceptance. The initial inspection and test of new or altered equipment to check for compliance with the applicable Code requirements.

The procedures in this Guide are recommendations only and are intended to illustrate a method of complying with the requirements in ASME A17.1d–2000 and earlier editions and A17.1–2000/B44-00 and later editions, requirements 8.10 and 8.11. The person performing the inspection and test may employ other methods to demonstrate compliance with the applicable code requirement. Qualified inspectors have the knowledge and experience to recognize potential deficiencies and to focus the inspection where necessary.

Where no inspection procedure is specified for routine inspections, it indicates that the Code requirements need no explanation. This does not indicate that no inspection of the specified item is required. The item is to be inspected for compliance with the applicable Code requirements.

Where, as an example, the periodic inspection has no specified inspections, the inspections specified under routine are to be used for the periodic inspection. If, as an example, the acceptance inspection has a test procedure that differs from the test procedure specified under periodic, the acceptance test procedure should be followed for acceptance inspection and the periodic test procedure should be followed for periodic inspections.

This Guide contains inspection procedures for compliance with the applicable Code only. A17.1d–2000 and earlier editions Rule 1000.2 and A17.1–2000/B44-00 and later editions requirements 8.10.1.2 and 8.11.1.2, reads in part "the inspection and test required by this Part are to determine that the equipment conforms to the applicable Code requirements at the time of installation and any alteration." This Guide contains no recommendations that exceed the requirements of A17.1d–2000 and earlier editions Rule 1000.2 and A17.1–2000/B44-00 and later editions requirements 8.10.1.2 and 8.11.1.2, and A17.3.

To facilitate making inspections and tests, sample checklists can be found in Nonmandatory Appendix A of this Guide. The checklist Item numbers correspond to the Item numbers in this Guide. The checklist also contains appropriate A17.1 and A17.3 references for each Item.

NOTE: See also Form and Arrangement under the Preface of this Guide.

(12) 3 QUALIFICATIONS OF INSPECTORS

Inspectors and inspection supervisors are required by ASME A17.1–2010 and earlier editions to be certified by an organization accredited by The American Society of Mechanical Engineers Qualifications for Elevator Inspectors Committee in accordance with the requirements set forth in the Standard for the Qualification of Elevator Inspectors, ASME QEI-1 and be recognized by the authority having jurisdiction. Effective January 1, 2014, accreditation of organizations to certify inspectors and inspection supervisors is no longer within the purview of The American Society of Mechanical Engineers.

(12) 4 PERSONAL SAFETY

Inspectors should have knowledge of the personal safety practices including, but not limited to, the safety practices contained in *The Elevator Industry Field Employees' Safety Handbook* as required by ASME QEI-1.

This handbook contains safety precautions an inspector is likely to need for most inspections. Because of the large variation in elevator equipment and possible unique elevator designs, it is the responsibility of each inspector, mechanic, and consultant to determine the safe manner to conduct each test and inspection before starting each procedure. It is not the inspector's responsibility to ensure safety of all participants in the tests and inspections. Inspectors are still advised to be aware of safety for themselves and others. Some elevator manufacturers, inspection organizations, and maintenance companies have safety procedures that go beyond the requirements in the Elevator Industry Field Employees Safety Handbook (EIFESH) or are unique to their organization or equipment. Where this is the case, the safer procedures should be followed. In past editions of the A17.2 Inspectors' Guide, specific cautions and safety warnings were part of the body of the Guide. Those cautions and warnings were removed with the inspector directed to use the EIFESH or other safety materials that may apply. The A17.2 Inspectors' Guide is for the use of trained elevator personnel who are aware of the hazards inherent in working with elevator equipment. Trainee inspectors are advised to use extra caution while learning inspection techniques and test procedures.

NOTE: *The Elevator Industry Field Employees' Safety Handbook* is available from Elevator World, Inc., P.O. Box 6507, Mobile, Alabama 36660 (http://www.elevator-world.com).

5 DUTIES OF INSPECTORS

The duties of inspectors are

(a) when witnessing acceptance inspections and tests of new or altered installations, to determine whether all parts of the installation conform to the requirements of the applicable code or regulations and whether the required safety devices function as required.

(b) when making routine and/or periodic inspections and tests, to determine that the equipment conforms to the applicable Code edition (edition which it was installed, A17.3 and local requirements) and that alterations conform with Code requirements. Determine that periodic tests performed by the owner or his agent are conducted in accordance with Code requirements and results of these tests demonstrate Code compliance.

(c) to report the results of inspections and tests in accordance with applicable local regulations.

It is not the function or duty of inspectors to make any repairs or adjustments to the equipment, nor to recommend methods or procedures for correction of deficiencies.

6 ARRANGEMENT FOR INSPECTION

The inspecting authority or the inspector should request the owner or his agent to make the following arrangements prior to an inspection or test:

(a) Provide qualified personnel for periodic and acceptance inspections and tests to perform the tests specified in the applicable code or regulations.

(b) Have a person familiar with the operation of the elevator available to accompany and assist during the inspections. The inspector should be accompanied by a person familiar with the operation of the equipment to assist him during his inspections.

(12) 7 RECOMMENDED EQUIPMENT

(a) It is recommended that the inspector have the following equipment:

(1) flashlight with a nonconductive case

(2) 6-ft (2-m) rule of nonconductive material

(3) set of thick gages

(4) small hammer, preferably a ½-lb (0.2-kg) ball peen

(5) chalk or crayon

(6) small metal mirror

(7) safety hat (nonconductive)

(8) copy of the latest applicable codes and standards (e.g., A17.1, A17.3, ANSI/NFPA 70, etc.)

(9) copy of the applicable local regulations

(10) copy of the latest edition of *The Elevator Industry Field Employees' Safety Handbook*

(11) copy of the checklists as contained in this Guide

(12) padlock, multiple lock device, and "Do Not Start" tags

(13) caliper

(14) telescoping pointer with an alligator clip and business cards or stiff paper

(15) other items such as an eraser, kitchen spatula, etc. (for escalators and moving walks)

(16) stop watch or timer

(17) 50-ft (15-m) nonconductive tape and 25-ft (7.5-m) tape

(18) tachometer, which reads directly in ft/min (m/s)

(19) multimeter

(20) level, 30-deg/60-deg triangle, and protractor or angle finder

(21) door test scale (gage) to check closing door force

(22) a light meter that can accurately measure light level from 0 fc to 19 fc (0 lx to 200 lx)

(23) marking chalk or crayon

(b) Periodic and Acceptance Inspection and Tests. In addition to the equipment specified above, the following should be provided by the owner or contractor:

(1) suitable test weights.

(2) dynamometer.

(3) copy of all pertinent drawings, specification, data sheets, and required test procedures.

(4) transceiver.

(5) come-along and "Chicago" grip or mid-line rope clamps.

(6) "Out of Service" signs and/or barricades at hoistway doors.

(7) pressure gage with damping (either liquid filled or an in-line snubber) to provide a steady reading. The gage should have full-scale reading, of twice the expected pressure, an accuracy of no less than 1% of full-scale reading, and a calibration sticker that shows that it has been calibrated within the last year.

(8) no. 16-gage copper wire or equivalent.

(9) keys for access and operation of all elevator equipment.

(10) jack and pipe stand or other suitable support.

(11) plumb line (for escalators).

(12) torque wrench (for escalators).

(13) skirt/step performance index test apparatus and accessory apparatus.

(14) comb-step/comb-pallet device test apparatus and accessory apparatus.

NOTE: If iron counterweight sections are used as test weights and scales are not available to accurately determine their weight in pounds, their approximate weight can be determined by multiplying the product of the length, breadth, and thickness in inches by 0.26. If weights are lead, multiply by 0.41. If weights are steel, multiply by 0.28. Deduct for volume of any holes or slots. The above lists of recommended equipment do not constitute all the equipment that can be required to perform the inspections or tests.

8 REFERENCE DOCUMENTS

Table 1 lists the organizations from which documents referenced in this book can be procured.

(12)

Table 1 Procurement Information

Organization	Address and Phone Number
ANSI	American National Standards Institute, Inc. 25 West 43rd Street New York, NY 10036 Telephone: (212) 642-4900 http://www.ansi.org
ASME	The American Society of Mechanical Engineers Three Park Avenue New York, NY 10016-5990 Telephone: (212) 591-8500 http://www.asme.org ASME Order Department 22 Law Drive Box 2900 Fairfield, NJ 07007-2900 Telephone: (201) 882-1167 (800) 843-2763
ASTM	American Society for Testing and Materials 100 Barr Harbor Drive West Conshohocken, PA 19428-2959 Telephone: (610) 832-9500 http://www.astm.org
CSA	Canadian Standards Association 5060 Spectrum Way Mississauga, Ontario L4W 5N6, Canada Telephone: (416) 747-4044 http://www.csa.ca
EIFESH	Elevator World, Inc. P.O. Box 6507 Mobile, AL 36660 http://safety.elevatorworld.com
IEEE	Institute of Electrical and Electronics Engineers, Inc. 445 Hoes Lane Piscataway, NJ 08854 Telephone: (800) 678-4333 http://www.ieee.org
NFPA	National Fire Protection Association 1 Batterymarch Park Quincy, MA 02169-7471 Telephone: (617) 770-3000 http://www.nfpa.org

Part 1
Elevator — Inside of Car

(12)

ITEM 1.1
DOOR REOPENING DEVICE

1.1.1 Periodic Inspections

For elevators installed under A17.1–1955 through A17.1d–1975, power opening of the car door was permitted to take place anywhere in the hoistway. For elevators installed under A17.1e–1975, power opening of the car door was permitted to take place only within the landing zone.

CAUTION: In any of the following tests where the inspector uses an object to test the reopening device, the object must not be inserted when the door is nearing its fully closed position.

(a) Mechanical Reopening Device (Safety Edge). Actuate the device while the doors are being closed and note whether car and hoistway doors stop and reopen. For vertically sliding car doors or gates, a stop and reopen is not required for obstructions within 5 in. (127 mm) of the sides of the opening.

(b) Electronic Reopening Device. Place an object in front of the leading edge of the car door at various positions while it is being closed. The car and hoistway doors should stop and reopen. For vertically sliding car doors or gates, a stop and reopen is not required for obstructions within 5 in. (127 mm) of the sides of the opening.

(c) Photoelectric Reopening Device. To qualify as a reopening device that complies with the Code, the device must sense the presence of the obstruction anywhere within the opening along the leading edge of the car door. Determine the location of the light beam or beams with relation to the car floor. Where an invisible beam is used, the position of the beam can be determined by an examination of the equipment. While the car and hoistway doors are being closed, obstruct the beam, which should cause the doors to stop and reopen. This type of device is usually installed in addition to a mechanical or electronic reopening device.

1.1.2 Periodic Test

1.1.3 Acceptance

1.1.4 References

1.1.4.1 Electric Elevators. A17.1d–2000 and earlier editions — Section 112 and Rule 1001.2(a)(1).

A17.1–2000/B44-00 and later editions — Requirements 2.13, 8.10.2.2.1(a), and 8.11.2.1.1(a).

A17.3 — Section 2.8.

1.1.4.2 Hydraulic Elevators. A17.1d–2000 and earlier editions — Section 112 {Rule 300.13}; and Rules 1001.2(a)(1) and 1004.2(a)(1).

A17.1–2000/B44-00 and later editions — Requirements 2.13 {3.13}, 8.10.3.2.1(a), and 8.11.3.1.1(a).

A17.3 — Section 2.8.

ITEM 1.2
STOP SWITCHES

1.2.1 Periodic Inspections

An emergency stop switch must be provided on freight elevators and existing passenger elevators with perforated enclosures. An emergency stop switch or in-car switch must be provided on passenger elevators.

(a) Emergency Stop Switch. Operate the emergency stop switch and note whether the car stops promptly. On elevators installed under A17.1b–1980 and later editions, the stop switch should also activate an audible signaling device. On elevators installed under A17.1a–1982 and later editions, an emergency stop switch is required to be located in or adjacent to each car operating panel. Passenger elevators with non-perforated car enclosures may be equipped with an in-car stop switch in lieu of the emergency stop switch.

(b) In-Car Stop Switch. Passenger elevators installed under A17.1d–1986 and later editions do not require an in-car emergency stop switch but do require an in-car stop switch. The in-car stop switch must be key operated or behind a locked panel. Check the operation of this switch by placing it in the stop position and attempt to operate the car by the normal means.

1.2.2 Periodic Test

1.2.3 Acceptance

1.2.4 References

1.2.4.1 Electric Elevators. A17.1d–2000 and earlier editions — Rules 210.2(e), 210.2(v), and 1001.2(a)(2).

A17.1–2000/B44-00 and later editions — Requirements 2.26.2.5, 2.26.2.21, 8.10.2.2.1(b), and 8.11.2.1.1(b).

A17.3 — Paragraphs 3.10.4(t) and 3.10.4(u).

1.2.4.2 Hydraulic Elevators. A17.1d–2000 and earlier editions — Rules 306.4(b)(1), 306.4(b)(6), and 1004.2(a)(2).